



## ***City of Maricopa*** **Grading and Drainage Plan Guideline**

**This form is a GUIDELINE to assist in the preparation of a Grading and Drainage Plan for submittal to and review by the City.**

### **REQUIREMENTS:**

#### **PLAN PREPARATION AND SUBMITTAL**

**Reference 'General Civil Plan Requirements' for Cover Sheet and plan preparation guidelines.**

**Reference 'Maricopa Approval Blocks' for applicable Approval/ Certification Blocks as required.**

**Reference 'City Standard Notes' for applicable notes.**

1. The First Submittal of the Grading and Drainage Plans shall include, at a minimum, the following items (unless previously submitted):
  - a. Drainage Report covering the entire development
  - b. Geotechnical or Soils Report
  - c. Include percolation test results as part of the review process. Under no circumstances will testing be deferred to after completion of site grading.
2. The Grading and Drainage Plans must encompass the entire parcel or development. All lots, tracts, and retention basins must be shown in their entirety. Phase limits and numbers, if applicable, must be shown on each applicable sheet
3. Detailed typical street sections shall be shown on a separate detail sheet.
4. Show a Legend on the detail sheet, for all symbols used on the grading plans.
5. The following blocks are required on the Cover sheet. See 'General Plan Requirements' for Cover sheet and general requirements.
  - a. City Engineer Approval
  - b. Grading/Drainage Certification Block
  - c. As-built Certification Block
6. When temporary retention basins or storm drainage facilities are present or proposed, the following Note must be shown on the cover sheet:

***The existing or proposed temporary retention and/or drainage facilities located within the area of this development will not be removed from service until the permanent retention and drainage facilities are functional.***

## GENERAL INFORMATION REQUIRED ON PLAN SHEETS

1. Show all existing and proposed storm drainage facilities, such as retention basins, catch basins, scuppers, curb and gutter and storm drain pipes, on the grading plans and identified by type and size. The designation of the facilities and structures shall match the designations used in the Drainage Report.
2. Show all existing buildings and other significant structures. The removal of these items must be noted, if appropriate.
3. Show all existing wells, streams, canals, irrigation laterals and ditches, lakes and other water features. Any proposed modifications must also be noted.
4. Show the existing topography by contours. Spot elevations are required when the subdivision's topography cannot be clearly defined by contours. Sufficient spot elevations are required immediately off-site, adjacent to the subdivision boundary within a 50-foot buffer, to provide an adequate analysis of grade differentials and drainage.
5. Spot elevations must be shown for all existing curb and gutter adjacent to the development. Spot elevations must be shown adjacent to each property corner, at all grade breaks, and at all scuppers/catch basins.
6. Cross-sections must be shown across the development's property line boundaries.
7. The following information must be shown for each Lot:
  - a. Proposed elevations at lot corners.
  - b. Proposed Finished Pad elevations
  - c. Proposed Finished Floor elevations
8. All existing and proposed block site perimeter walls on or adjacent to subdivision boundaries and retention basin perimeters must be shown on the plans, with Top of Wall elevations and Finished Grade elevations on both sides of the wall, at all critical points. (Note: This requirement does not include block fences or Dooley Walls.)
9. All site perimeter wall structural details and retaining wall structural details are required to be shown on the plans.
10. All Finished Floor Elevations must be a minimum of 12 inches above the high point of the building site or 12 inches above the water surface elevation of the  $Q_{100}$  flow in the adjacent street(s) or drainage way. (Pinal County Drainage Ordinance, Section 602.6.)
11. The Lot grading must be adequately sloped to prevent storm water from ponding on the Lot. The minimum allowable slope from back of Lot to front of Lot shall be 0.50%, unless prior approval is obtained from the City Engineer.
12. Cross-sections must be shown for all retention basins with the elevations of the top of slope, the bottom of the basin, and the side-slope called out. The depth of ponding in the basin, due to the retention of the 100-year, 2-hour storm event must also be shown on the retention basin cross-section. The maximum allowable depth of ponding in the basin is 3 feet. The maximum allowable side-slope is 4:1.

13. No portion of a retention basin shall encroach within the street right-of-way or the Public Utility Easement (PUE).
14. The grading plan of all retention basins must show:
  - a. The Tract number or designation
  - b. The same retention basin designation as shown in the Drainage Report
  - c. Contours shall be 1' (foot) minimum elevations
  - d. The design 100 yr High Water elevation with 1' of freeboard and Bottom elevation.
  - e. The dimensioned location of all Dry Well(s), with grate elevations, if applicable. .
  - f. All Drywells, at a minimum, shall be the double chamber type consisting of an interceptor chamber and a settling chamber.
  - g. Show outfall for "All" individual basins.
  - h. Show ultimate outfall for entire development.
  - i. Show volume required/provided per Drainage Report.
15. Show construction details for the following items, but not limited to:
  - a. Drainage swales with grade and spot elevations
  - b. Storm drains with profile and showing Hydraulic Grade Line
  - c. Catch basins and connector pipes with profile and showing Hydraulic Grade Line
  - d. Scuppers and spillways – Show a longitudinal section, with elevations and slopes, that includes the full width of the street, scupper, spillway, bottom of the retention basin, and the end of the erosion protection. The design high water elevation must be noted on the appropriate location on the spillway.